Signal and Imaging Sciences Conference

November 15 – 16, 2007

at Lawrence Livermore National Laboratory, B482 Auditorium

Keynote Address
9:00 AM
Thursday, November 15

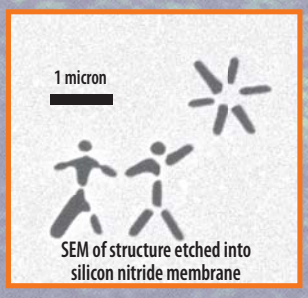
Recognizing Objects and Actions in Images and Video

The object recognition problem is that of finding instances of object classes in an image or video sequence: faces, giraffes, the digit 5, chairs etc. This has to be accomplished while allowing for intra-class variation, as well as changes in illumination and viewpoint. Dr. Malik's group has developed a theory of object recognition by measuring shape similarity, using point correspondences based on robust relational descriptors: "shape contexts" and "geometric blur templates".
He will show results on a variety of 2D and 3D recognition problems.
The action recognition problem is that of finding instances of actions in video sequences – run, jump, kick, etc. – all the while allowing for variation in the person performing the action, clothing, illumination and viewpoint.
This talk is based on joint work; please visit
http://http.cs.berkeley.edu/projects/vision/vision_group.html
for pointers to publications.

Prof. Jitendra Malik

Arthur J. Chick Professor, Department of EECS
University of California, Berkeley

For information and to register, go to the CASIS website: http://casis.llnl.gov/



SEM of structure etched into silicon nitride membrane


Reconstructed Image – achieved diffraction limited resolution!

Above right is the fastest diffraction-limited image ever reconstructed. (The diffraction pattern that generated this result is the background image.) Using coherent x-rays (32 nmλ) from the 30-fs FLASH free-electron laser in Hamburg, the sample structure (etched into a silicon nitride membrane; SEM image at left) was completely destroyed by the imaging pulse at 30 trillion W/cm^2. The program goal is to observe fs-scale processes down to the resolution of individual molecules.

Image Credit: Henry Chapman, LLNL; et al, Nature Physics (Dec 2006) and Nature (Aug 2007).

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